# QC386FNx Bluetooth Classic and LE Audio Tx Module

Features

- Bluetooth v5.3/5.4 Class 1/2 module (Classic + LE 2M)
- Tri-core processors - 32-bit 32/80MHz APP and 240MHz Kymera DSP
- Built-in 16/32Mbit flash on module
- Extremely low current consumption
- Integrated Li-ion battery charger
- 5V/3V/Battery power supply and configurable 1.8/3.3V I/O operation
- LED drivers with PWM, I2C, UART and PIO interfaces
- BLE GATT and iOS/Android GAIA app support
- A2DP, AVRCP, HFP, SPP Classic profiles and LEA profiles support
- LE Audio Unicast (TMAP) and Auracast (PBP) Tx application firmware available
- HFP-AG / A2DP Source transmitter Tx application firmware available
- 23ms Ultra Low Latency (ULL) Gaming and Voice Back Channel
- USB Full Speed Device (USB-FS 12 Mbps) with 24-bit 96KHz audio
- I2S/PCM/SPDIF stereo audio digital input interfaces up to 24-bit 192KHz sampling
- Quad analog input interfaces up to 24-bit 96KHz resolution
- Up to 99dB SNR / 105dB dynamic range / 0.0018% THD in differential mode
- Single microphone bias shared among four channels
- Support firmware update via USB and OTA
- SBC, aptX Classic / HD / Adaptive / Lossless and LC3 BT codec
- RoHS / REACH compliant
- BQB qualified (D058628) and FCC/IC-ISED/CE/RCM certification available upon request
- Dimension(QC386FNA)
  - 18.0 x 13.0 x 2.8 mm
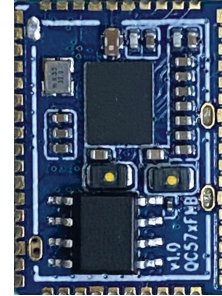
Applications

- USB audio dongles
- DJ machines
- Bluetooth two-way radio and walkie-talkie
- Unified Communication devices
- Professional musical equipment

- TV and home theaters
- Public address equipment
- Microphone systems
- Audio transmitters and receivers
- Hearing loop and T-Coil replacement

Description

QC386FNx is Bluetooth Class1 (max 13dBm) dual mode module that is targeted at Bluetooth Classic and LE Audio applications. It is based on the most advanced Qualcomm QCC3086 chipset and the latest ADK. Two application processor cores with 32/80MHz operation and a 240MHz Kymera DSP Co-Processor enable not only the existing Bluetooth multi-media function such as stereo audio (A2DP audio) communications, but also demanding Classic and LE Audio dual mode capability. The highly integrated hardware includes high performance stereo ADC, and battery charger, thus saving costs of external components. The host interfaces include USB, I2S, S/PDIF, SPI and UART, that are programmable for data communication, module control or firmware upgrade.

The module is Bluetooth v5.3/5.4 compliant with LE Audio capability and comprehensive profile support such as PBP, BAP, BASS, CAP, TMAP, VCP, ASCS, CCP, CSIP, MCP, PACS. USB host software is provided upon request to change the device configuration in the field as as Broadcast Name, Broadcast Code (encryption key) and audio settings.

Its powerful and flexible system architecture design also allows the module to support traditional HFP, A2DP, AVRCP, SPP, PBAP, HID and many other Bluetooth Classic profiles for applications like battery reporting, remote control and HID, in addition to LE Audio profiles. Furthermore, SBC, AAC, aptX Classic, aptX HD, aptX Adaptive, aptX Lossless and aptX Voice (some require licensing) audio streaming are also supported.

The complete module design relieves host system developers from handling complex Bluetooth operations and compatibility issues. With integrated on-chip balun and on-board band pass filter, it provides a clean 50 ohm antenna interface to serve the needs of various antenna designs, matching and testing in host system development.

Physical Layout
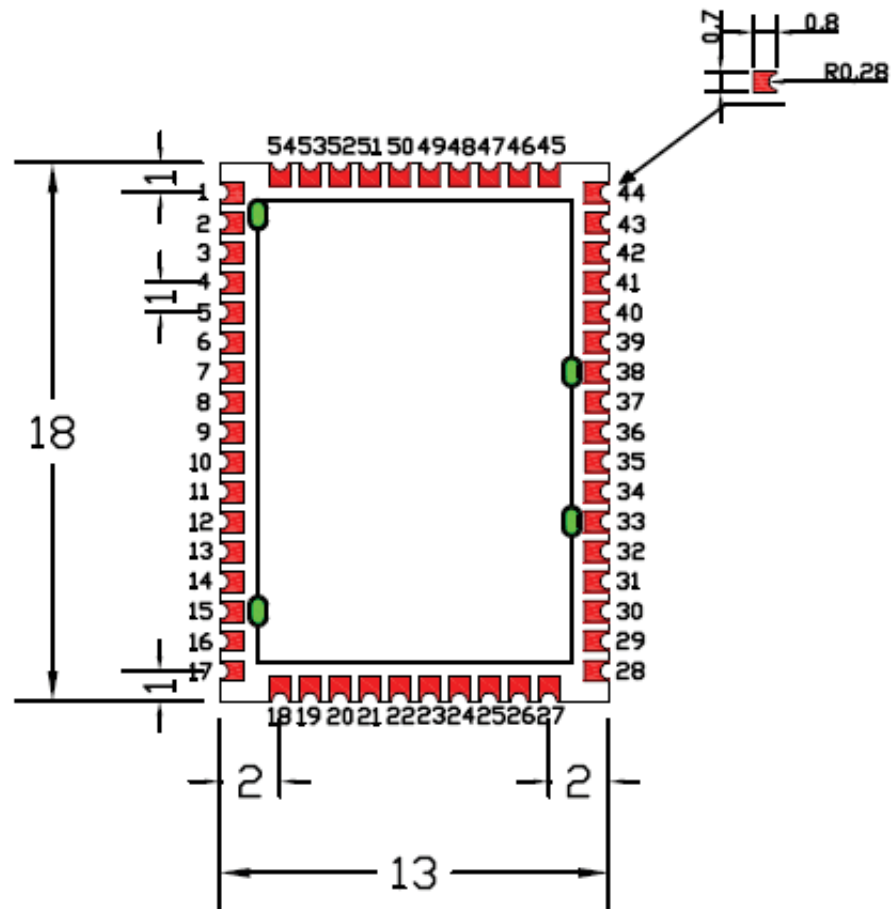
Module Top View
(dimension figures in mm)

Recommended PCB Footprint
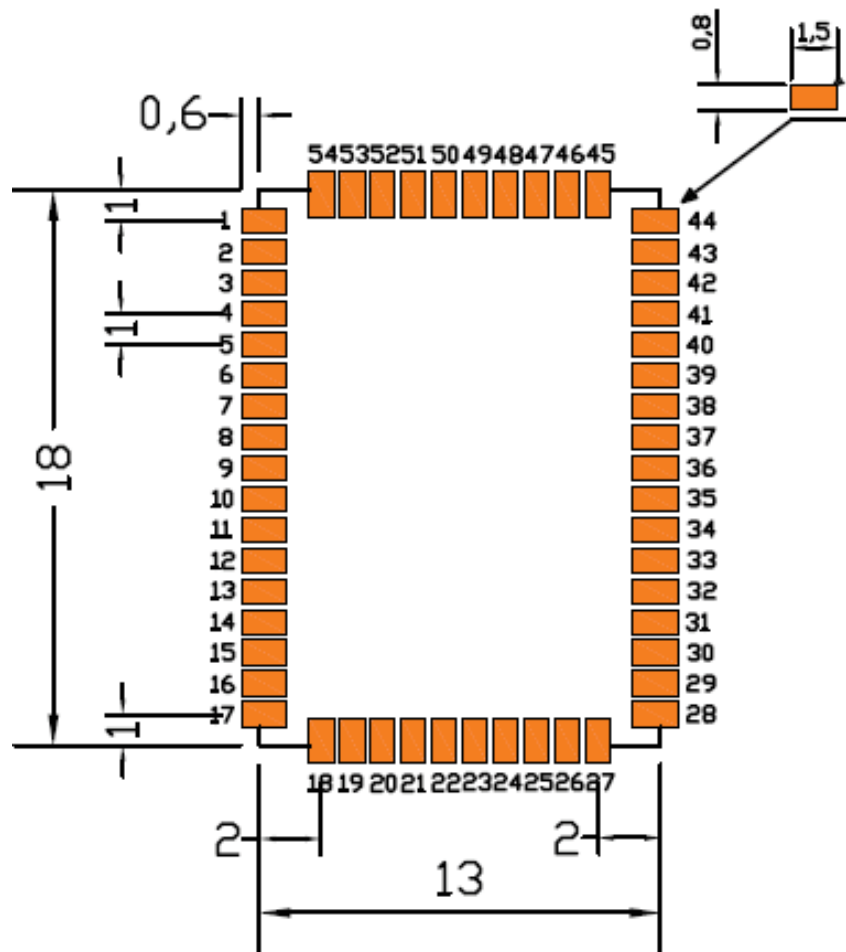
Pins Configurations

PIN	QC386FNx	TYPE	FUNCTIONS
1	GND	GND	Ground
2	MIC2_P_LIN_RP	Analog	Right Mic/line in audio positive input
3	MIC2_N_LIN_RN	Analog	Right Mic/line in audio negative input
4	MIC1_P_LIN_LP	Analog	Left Mic/line in audio positive input
5	MIC1_N_LIN_LN	Analog	Left Mic/line in audio negative input
6	MIC_BIAS	Analog	Microphone bias output
7	reserved		No function, leave unconnected
8	reserved		No function, leave unconnected
9	reserved		No function, leave unconnected
10	reserved		No function, leave unconnected
11	GND	GND	Ground
12	VOUT_1v8	Power	1.8v switching regulator output
13	PIO37	Bi-directional	Programmable Input/Output line
14	PIO34	Bi-directional	Programmable Input/Output line
15	GND	GND	Ground
16	PIO5	Bi-directional	Programmable Input/Output line
17	PIO7	Bi-directional	Programmable Input/Output line
18	PIO4	Bi-directional	Programmable Input/Output line
19	PIO8	Bi-directional	Programmable Input/Output line
20	PIO6	Bi-directional	Programmable Input/Output line
21	GND	GND	Ground
22	PIO3	Bi-directional	Programmable Input/Output line
23	PIO39	Bi-directional	Programmable Input/Output line
24	LED3	Open Drain	LED driver
25	LED2	Open Drain	LED driver
26	LED1	Open Drain	LED driver
27	LED0	Open Drain	LED driver
28	PIO16	Bi-directional	Programmable Input/Output line
29	PIO15	Bi-directional	Programmable Input/Output line
30	PIO21	Bi-directional	Programmable Input/Output line
31	PIO35	Bi-directional	Programmable Input/Output line
32	PIO36	Bi-directional	Programmable Input/Output line
33	GND	GND	Ground
34	VCHG	Analog	5v Charger input.
35	CHG_EXT	Analog	External battery charger control.
36	VCHG_SENSE	Analog	Battery charger sense input.
37	VBAT	Power	Battery input
38	GND	GND	Ground
39	SYS_CTRL	CMOS Input	System power on enable
40	USB_DP	Analog	USB data +ve
41	USB_DN	Analog	USB data –ve
42	VPAD1	Power	Power supply for PIO1..PIO8

43	VPAD2	Power	Power supply for PIO15..PIO21 and PIO40..PIO44
44	GND	GND	Ground
45	PIO17	Bi-directional	Programmable Input/Output line
46	PIO18	Bi-directional	Programmable Input/Output line
47	PIO19	Bi-directional	Programmable Input/Output line
48	PIO20	Bi-directional	Programmable Input/Output line
49	GND	GND	Ground
50	BT_RF	Analog	RF Antenna port
51	GND	GND	Ground
52	PIO38	Bi-directional	Programmable Input/Output line
53	PIO2	Bi-directional	Programmable Input/Output line
54	PIO1	Bi-directional	Programmable Input/Output line

General Electrical Specification

Absolute Maximum Ratings		
Ratings	Min.	Max.
Storage Temperature	-40 °C	+85 °C
Supply Voltage at VCHG	-0.4 V	7.0 V
Supply Voltage at VBAT and SYS_CTRL	-0.4 V	4.8 V
Supply Voltage at VPAD	-0.4V	3.80V
Analog Audio Input	-0.4V	2.1V
Recommended Operating Condition		
Operating Condition	Min.	Max.
Operating Temperature range	-10 °C	+60 °C
Supply Voltage at VCHG	4.75 V	5.75 V
Supply Voltage at VBAT and SYS_CTRL	2.8 V	4.25 V
Supply Voltage at VPAD	1.70 V	3.60 V

Parameters	Description	Min.	Typ.	Max.	Units
Current Consumption - A2DP / Auracast Streaming	Typical	-	5	-	mA
Battery Charge Current - Internal mode		-	-	200	mA
Battery Charge Current - External mode (FNB version only)		-	-	1800	mA
ADC Input Range		-	-	2.4	Vpp

Audio Characteristics					
Parameter	Description	Min.	Typ.	Max.	Units
Analog Input - THD+N	single-ended [2]	-	-92	-	dB
	differential [2]	-	-96	-	dB
Analog Input – SNR Signal-to-Noise A-weighted	single-ended [2]	-	100	-	dB
	differential [2]	-	99	-	dB
Analog Input - Dynamic Range A-weighted	single-ended [2]	-	100	-	dB

weighted	differential [2]	-	100	-	dB
ADC Sample Rates	24bit [3]	8	-	96	kHz
DAC Sample Rates	24bit [4]	8	-	192	kHz

Notes:
[1] Load 32Ω, input frequency 1kHz, B/W 20Hz to 20kHz
[2] Input frequency 1kHz, B/W 20Hz to 20kHz
[3] Available sample rates 8, 16, 32, 44.1, 48, 96
[4] Available sample rates 8, 16, 32, 44.1, 48, 96, 192

Radio Characteristics

General Radio Characteristics		
Operating Frequency	2400 to 2483.5 MHz	
RF Output Power	0 – 13 dBm	
RX Sensitivity	-97dBm (Typ)	
Transmit Signal Range	30 m (Typ)	
Lower quad band	2 MHz	
Upper quad band	3.5 MHz	
Carrier frequency	2402 to 2480 MHz, 1 MHz step, 79 channels	
Modulation Method	GFSK (1 Mbps) Pie/4 DQPSK (2 Mbps) 8DQPSK (3Mbps)	
Hopping	1600 hops/s, 1 MHz channel space	
Maximum data rate	GFSK	Asynchronous: 732.2 kbps / 57.6 kbps Synchronous: 433.9 kbps / 433.9 kbps
	Pie/4 DQPSK	Asynchronous: 1448.5 kbps / 115.2 kbps Synchronous: 869.7 kbps / 869.7 kbps
	8DQPSK	Asynchronous: 2178.1 kbps / 177.2 kbps Synchronous: 1306.9 kbps / 1306.9 kbps

Basic Rate, VBAT = 3.7V Temperature =+25°C						
	Frequency (GHz)	Min	Typ	Max	Bluetooth Specification	Unit
Sensitivity at 0.1% BER	2.402	-	-97	-95	<= - 70	dBm
	2.441	-	-97	-95		dBm
	2.480	-	-97	-95		dBm
Maximum received signal at 0.1% BER		>= -9			> - 20	dBm
RF transmit power [1]		11.5	+13	-	-6 to +20 [2]	dBm
Initial carrier frequency tolerance		-75	3	+75	±75	kHz
20dBm bandwidth for modulated carrier		-	925	1000	< 1000	kHz
Drift (single slot packet)	Single Slot	-	6	25	<25	kHz
	Three Slot	-	7	40		kHz
	Five Slot	-	7	40		kHz
Drift Rate		-	4	20	<20	kHz/50µs
△f1avg "Maximum Modulation"		140	165	175	140<△f1avg <175	kHz
△f2maz "Minimum Modulation"		115	143	-	>=115	kHz
C/I co-channel		-	-	-	<= 11	dB
Adjacent channel selectivity C/I F=F0 +1 MHz [3][5]		-	-11	0	<= 0	dB
Adjacent channel selectivity C/I F=F0 - 1MHz [3][5]		-	-11	0	<= 0	dB
Adjacent channel selectivity C/I F=F0 +2 MHz [3][5]		-	-38	-30	<= - 30	dB
Adjacent channel selectivity C/I F<F0 - 3MHz [3][5]		-	-59	-40	<= - 40	dB
Adjacent channel selectivity C/I F=F0 +3 MHz [3][5]		-	-46	-40	<= - 40	dB

Adjacent channel selectivity C/I F>F0 +3 MHz [3][5]	-	-59	-40	<= - 40	dB
Adjacent channel selectivity C/I F=Fimage [3][5]	-	-33	-9	<= -9	dB
Adjacent channel transmit power F=F0±2MHz [4][5]	-	-	-	<= - 20	dBc
Adjacent channel transmit power F=F0±3MHz [4][5]	-	-	-	<= - 40	dBc

Enhanced Rate, VBAT = 3.7V Temperature =+25°C

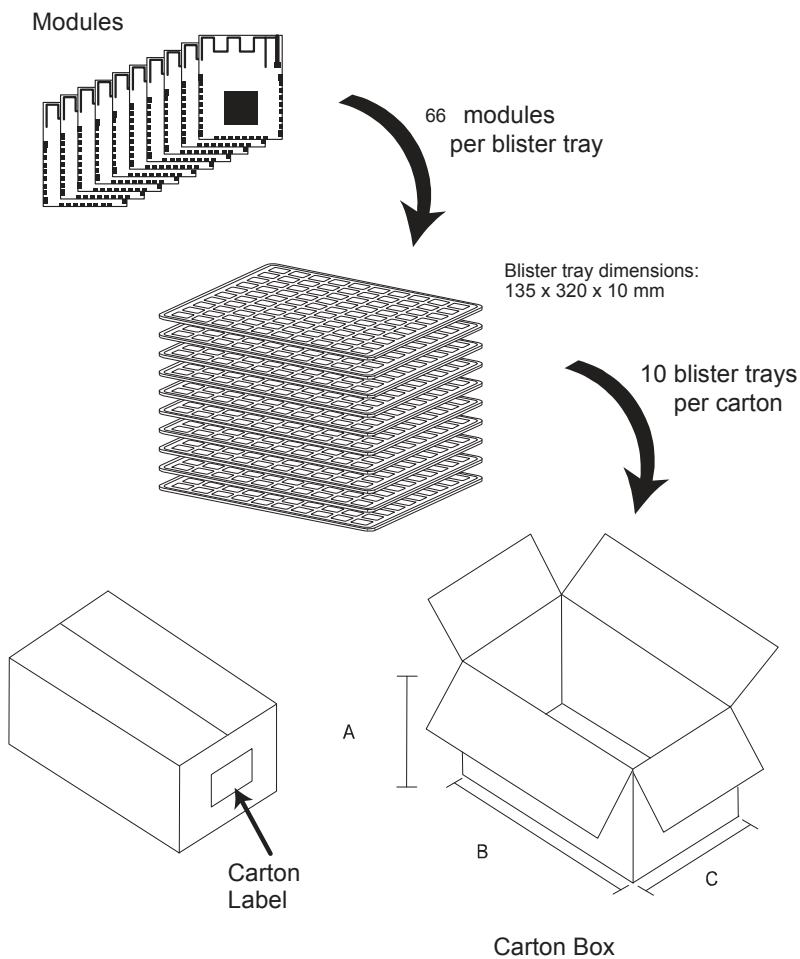|	Frequency (GHz)	Min	Typ	Max	Bluetooth Specification	Unit
Sensitivity at 0.01% BER Pie/4 DQPSK	2.402	-	-96.5	-94.5	<= - 70	dBm
	2.441	-	-96.5	-94.5		dBm
	2.480	-	-96.5	-94.5		dBm
Sensitivity at 0.01% BER 8DQPSK	2.402	-	-90.0	-88.0	<= - 70	dBm
	2.441	-	-90.0	-88.0		dBm
	2.480	-	-90.0	-88.0		dBm
Maximum received signal at 0.1% BER		>= -9			> - 20	dBm
RF transmit power [1]		8.5	+12.5	-	-6 to +20 [2]	dBm
Pie/4 DQPSK						
Adjacent channel selectivity C/I F=F0 +1 MHz [4][5]	-	-11	0		<= 0	dB
Adjacent channel selectivity C/I F=F0 - 1MHz [4][5]	-	-12	0		<= 0	dB
Adjacent channel selectivity C/I F=F0 +2 MHz [4][5]	-	-41	-30		<= - 30	dB
Adjacent channel selectivity C/I F<F0 - 3MHz [4][5]	-	-60	-40		<= - 40	dB
Adjacent channel selectivity C/I F=F0 +3 MHz [4][5]	-	-47	-40		<= - 40	dB
Adjacent channel selectivity C/I F>F0 +3 MHz [4][5]	-	-60	-40		<= - 40	dB
Adjacent channel selectivity C/I F=Fimage [4][5]	-	-33	-7		<= -9	dB
8DQPSK						
Adjacent channel selectivity C/I F=F0 +1 MHz [4][5]	-	-57	5		<= 5	dB
Adjacent channel selectivity C/I F=F0 - 1MHz [4][5]	-	-7	5		<= 5	dB
Adjacent channel selectivity C/I F=F0 +2 MHz [4][5]	-	-37	-25		<= - 25	dB
Adjacent channel selectivity C/I F<F0 - 3MHz [4][5]	-	-53	-33		<= - 33	dB
Adjacent channel selectivity C/I F=F0 +3 MHz [4][5]	-	-41	-33		<= - 33	dB
Adjacent channel selectivity C/I F>F0 +3 MHz [4][5]	-	-53	-33		<= - 33	dB
Adjacent channel selectivity C/I F=Fimage [4][5]	-	-28	0		<= 0	dB

Notes:

[1] Default firmware setting. Output power is measured at the RF output pin. Specified Min value is based on statistical variance and represents the absolute limit rather than expected performance.

[2] Class 1/2 RF transmit power range in the Bluetooth specification

[3] Up to three exceptions are allowed in the Bluetooth specification

[4] Up to five spurious response frequencies are allowed in the Bluetooth specification

[5] Measured at F0 = 2441MHz

Bluetooth Low Energy, Temperature =+25°C

	Frequency (GHz)	Min	Typ	Max	Bluetooth Specification	Unit
Sensitivity at 30.8% PER 1Mb/s [3]	2.402	-	-100.5	-98.5	<= - 70	dBm
	2.440	-	-100.5	-98.5		dBm
	2.480	-	-100.0	-98.0		dBm
Sensitivity at 30.8% PER 2Mb/s [3]	2.402	-	-97.5	-95.5	<= - 70	dBm
	2.440	-	-97.5	-95.5		dBm
	2.480	-	-97.5	-95.5		dBm
Maximum received signal at 30.8% PER		>= -9			> - 20	dBm

RF transmit power [1]		-	+8.0	-	-20 to +10 [2]	dBm
Maximum carrier frequency offset	1MB/s	-	3	150	<= 150	kHz
	2MB/s	-	4	150		kHz
Maximum drift rate	1MB/s	-	4	20	<= 20	kHz/50 µs
	2MB/s	-	4	20		
Carrier drift	1MB/s	-	4	50	<= 50	kHz
	2MB/s	-	4	50		

Notes:

[1] Default firmware setting. Output power is measured at the RF output pin. Specified Min value is based on statistical variance and represents absolute limit rather than expected performance.

[2] Transmit power range in the Bluetooth specification.

[3] Measured using test packets with 37 octet payload.

Packing Information

Modules

66 modules per blister tray

Blister tray dimensions:
135 x 320 x 10 mm

10 blister trays per carton

Carton Label

Carton Box

Model	A	B	C	Units	Quantity per Carton	GW / NW
QC386FNA	8	34	14	cm	660 pcs	2.1 / 1.6 kg

* +/- 1cm / 0.1kg, or 10% whichever is greater for all packaging measurements.

Precautions

- **Storage Condition**

  This product should be stored without opening the packing, and under temperature 0-60 °C and humidity 30-70% RH. It should be used within 15 months after reception.

- **ElectroStatic Discharge (ESD)**

  This product is sensitive to ElectroStatic Discharge (ESD). Observe precautions for handling electrostatic sensitive devices. Such precautions are described in the ANSI/ESD S20.20, IEC/ST61340-5, JESD625-A or equivalent standards.

- **Module Reflow Installation**

  For RoHS/Pb-free applications, Sn96.5/Ag3.0/Cu0.5 solder is recommended.

Profile Feature	Recommended Parameters
Ramp-up rate before liquidous	< 2°C / second
Preheat	150-200°C 60-90 seconds
Maximum time at liquidous	40 – 80 seconds
Maximum peak temperature	230° - 240°C (below 250°C)
Ramp-down rate	< 6°C / second

Ordering Information

Part Number	FW Code Available	Description
QC386FNA		QCC3086 16Mbit (external antenna)
	Please check with your sales representative	

Revision History

Rev.	Date	Description
01	2023-11-21	Preliminary release
02	2024-01-08	Editorial updates
03	2024-04-11	Corrections on pin functions : pin13: PIO43 changed to PIO37 pin14: PIO40 changed to PIO34 pin23: LED5 changed to PIO39 pin24: LED4 changed to LED3 pin31: PIO41 changed to PIO35 pin32: PIO42 changed to PIO36 pin52: PIO44 changed to PIO38 pin7 to pin10: changed to reserved pins without any functions.
04	2024-11-09	RF data updates

FCC

OEM/Integrators Installation Manual

Important Notice to OEM integrators

1. This module is limited to OEM installation ONLY.

2. This module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).

3. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations

4. For FCC Part 15.31 (h) and (k): The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are complaint with the transmitter(s) rule(s).

The Grantee will provide guidance to the host manufacturer for Part 15 B requirements if needed.

Important Note

notice that any deviation(s) from the defined parameters of the antenna trace, as described by the instructions, require that the host product manufacturer must notify to GT-tronics HK Ltd that they wish to change

the antenna trace design. In this case, a Class II permissive change application is required to be filed by the USI, or the host manufacturer can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

End Product Labeling

When the module is installed in the host device, the FCC/IC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: B4O-QC38XFNX"

"Contains IC: 21698-QC38XFNX "

The FCC ID/IC ID can be used only when all FCC/IC compliance requirements are met.

Antenna Installation

(1) The antenna must be installed such that 20 cm is maintained between the antenna and users,

(2) The transmitter module may not be co-located with any other transmitter or antenna.

(3) Only antennas of the same type and with equal or less gains as shown below may be used with this module. Other types of antennas and/or higher gain antennas may require additional

authorization for operation.

Antenna type	Bluetooth Peak Gain (dBi)
Chip Antenna	1.80 dBi
Metal Wire Antenna	2.71 dBi
Dipole	5.00 dBi

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC/IC authorization is no longer considered valid and the FCC ID/IC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC/IC authorization.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.   However, there is no guarantee that interference will not occur in a particular installation.   If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could

void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

List of applicable FCC rules

This module has been tested and found to comply with part 22, part 24, part 27, part 90, 15.247 and 15.407 requirements for Modular Approval.

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

This device is intended only for OEM integrators under the following conditions: (For module device use)

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Industry Canada Statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et

2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or colocation with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 21698-QC38XFNX".

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 21698-QC38XFNX ".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à

la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.